

Joshua A. Jones

Indiana University Bloomington,
Department of Biology
Program in Evolution,
Ecology, and Behavior

Email: JAJ35@IU.EDU

Website: <https://complex-microbiome.github.io>

ORCID ID: 0000-0003-2010-861X

RESEARCH INTERESTS

Host-Microbe Interactions, Environmental Microbiology,
Symbioses and Evolutionary Innovation, Microbiomes Across Complex Life Cycles,
& Role of Microbiomes in Development and Immunity

EDUCATION

2019-present:	Graduate student (PhD), Indiana University, Department of Biology, Program in <i>Evolution, Ecology, and Behavior</i> (EEB), Minor in Microbiology Advisor: Dr. Armin Moczek
2015-19	BS , Biological Sciences, University of Missouri

FELLOWSHIPS AND AWARDS

College of Arts and Sciences Travel Award (2023)
Carl Storm Underrepresented Minority Fellowship (2023)
Outstanding Student Presentation Award, ASM – Microbe (2022)
National Science Foundation Graduate Research Fellowship (2021-2025)
Templeton Fellowship (2020-2021)
Indiana University Graduate Scholar's Fellowship (2019-25)
Research Experience for Undergraduates (REU) Fellowship (2018)
Stipend through Exposure to Research for Science Students Fellows Program (2017-19)
Life Sciences Undergraduate Research Opportunity Program (LS UROP, 2017)

PUBLICATIONS

- Jones JA**, Newton IG, Moczek AP. Microbiome composition and turnover in the face of complex lifecycles and bottlenecks: insights through the study of dung beetles. *Applied and Environmental Microbiology Journal*. <https://doi.org/10.1128/aem.01278-24>
- Rohner PT, **Jones JA**, Moczek AP. Roles of - and interactions among - plasticity, symbionts, and niche construction in dung beetle development and evolution. *Journal of Experimental Biology*. <https://doi.org/10.1242/jeb.245976>.
- *In press* -
- Nadolski EM, Davidson PL, **Jones JA**, Westwick RR, Moczek AP. Insects in their Environments: eco-devo and evo-devo perspectives. *Comprehensive Insect Physiology and Biochemistry Vol. 2*.
- *In preparation* -
- Jones JA**, Newton IG, Moczek AP. Insights into microbial genomic potential and functional adaptations for herbivore dung utilization within the *Onthophagus taurus* gut metagenome. *mSystems*.
- Jones JA**, Newton IG, Moczek AP. Metagenomes and metagenome-assembled genomes from *Onthophagus taurus*. *Microbiology Resource Announcements*.
- Jones JA**, Newton IG, Moczek AP. Individual microbiome members partially recover host development. *TBD*.
-

PRESENTATIONS

- *Oral presentations* -
- Jones, J. 2025. Drastic shifts in microbiota across a dung beetle life cycle reveal multiple beneficial symbionts. The Society for Integrative and Comparative Biology Conference, Atlanta, GA
- Jones, J. 2024. Not all who wander are lost: Drastic shifts in microbiota reveal multiple beneficial symbionts. Indiana University Brown Bag Seminar, Bloomington, IN
- Jones, J., Newton, I., & Moczek, A. 2023. Metamorphosis Matters: Investigating the Dynamic Microbiome of *Onthophagus* Dung Beetles. EEB Retreat, Bloomington, MO
- Jones, J., Newton, I., & Moczek, A. 2022. Intra- and transgenerational maintenance and function of dung beetle microbiota. Beneficial Microbes, Madison, WI
- *Poster presentations* -
- Jones, J., Newton, I., & Moczek, A. 2023. Transgenerational microbiota maintenance and function in a dung beetle. Gordon Research Conference, Lucca (Barga), LU, Italy
- Jones, J., Newton, I., & Moczek, A. 2023. Transgenerational microbiota maintenance and function in a dung beetle. Gordon Research Seminar, Lucca (Barga), LU, Italy
- Jones, J., Newton, I., & Moczek, A. 2022. Intra- and transgenerational maintenance and function of dung beetle microbiota. Beneficial Microbes, Madison, WI
- Jones, J., Newton, I., & Moczek, A. 2022. Intra- and transgenerational maintenance of dung beetle microbiota. American Society for Microbiology – Microbe, Washington, DC
- Jones, J., & Leal, M. 2019. An experimental approach to evaluate problem solving in the lizard *Anolis sagrei*. Spring Undergraduate Research, Columbia, MO.

- Poster presentations continued -

- Jones, J., Lyons, C., & Shiaris M. 2018. Effect of temperature and salinity on gill microbiome in the Eastern oyster, *Crassostrea virginica*. Annual Biomedical Conference for Minority Students, Indianapolis, IN.
- Jones, J., Lyons, C., & Shiaris M. 2018. Effect of temperature and salinity on gill microbiome in the Eastern oyster, *Crassostrea virginica*. UMass Boston Summer Research Symposium, Boston, MA.
- Jones, J., & Leal, M. 2018. Does color matter? Prey selection by the Bold Jumping Spider (*Phidippus audax*). Spring Undergraduate Research Forum, Columbia, MO.
- Jones, J., & Leal, M. 2018. Does color matter? Prey selection by the Bold Jumping Spider (*Phidippus audax*). Missouri Life Science Week, Columbia, MO.
- Jones, J., & Leal, M. 2017. Does color matter? Prey selection by the Bold Jumping Spider (*Phidippus audax*). Annual Biomedical Conference for Minority Students, Phoenix, AR.
- Jones, J., & Leal, M. 2017. Does color matter? Prey selection by the Bold Jumping Spider (*Phidippus audax*). Summer Undergraduate Research Forum, Columbia, MO.
-

TEACHING, OUTREACH, AND SERVICE

2024	Associate Instructor for Honors Evolution course
2024	Guest Lecture for Honors Evolution Course
2023	Associate Instructor for Biology of the Senses course
2023	James Holland RISE program presenter
2022	Guest lecture for Entomology course
2021 - 22	Reviewer for Molecular Ecology
2021	GROUPEs Summer Mentor
2017 - 19	Peer mentor for Exposure to Research for Science Students
2018 - 19	Lang Middle School STEM outreach

Techniques

Molecular Techniques

- DNA extraction using QIAGEN kits and Phenol:Chloroform
- PCR; qPCR
- Library preparation for amplicon-based and whole genome sequencing with Illumina
- Insect immunity assays: phenol-oxidase activity, lysozyme-like activity, protein concentration, hemocyte morphology and abundance

Bioinformatics

- 16S analysis with QIIME2 & Mothur
- Metagenome assembly and analysis with SPAdes, MEGAHIT, QUAST, SAMtools, MetaBAT, CONCOCT, CheckM, Kraken2, and Prokka via KBASE or a supercomputer
- Eukaryotic genome assembly and annotation from Hi-Fi Sequencing

Programming Languages

- Basic programming in R and Perl
- Microsoft Office (Excel, Word, PowerPoint, OneNote)
- Terminal/Bash for supercomputer utilization